AMEND THE SPECIFICATION:

[Most following changes are corrections of typos and adding explanatory detail:]

1. Page 2, line 33 through pg. 3, ln. 10: Replace paragraph as follows:

Various simpler exercisers , typically called striders, involve pedals or foot pads that move back and forth, staying in a single plane or arc. Another provides vertical motion independently of its back and forth motion , but balances the user's weight between the two pedals. These all allow variable length strokes or strides, but none provides the easy, normal walk-jog-run action of stepping down on, and transferring <u>essentially</u> all the weight to the forward foot, and freely swinging the unweighted trailing foot forward while pushing back on the weighted foot, then stepping down to end the stride at any point in each stride, from one stride to the next. These [[units]] <u>"strider"</u> <u>devices</u> allow only balancing the user's weight more or less continuously between the two pedals while the feet are pushed backward and forward in equal strokes in opposite directions from the user's center of gravity. Again, this results in a constrained and laborious feel, unlike normal walk-run action in which each leg is [[completely]] unweighted on each forward return stroke.

2. Page 3, line 30 through line 40: Replace paragraph:

Among the wide variety of pedal or foot pad machines, only the elliptical motion cycle seems to provide a reasonable approximation of the normal walk-run action, but stroke or stride is not automatically variable , though some may be adjustable. Of all the pedal or foot pad type machines allowing variable strokes or strides, none provides realistic, normal walk-run stride action including forward foot step down with essentially full weight transfer to that foot (involving placement of the user's center of gravity essentially directly above it), and a [[completely]] largely unweighted opposite, returning foot, free of any parts of the machine with automatically varying stride lengths from stride to stride.

3. Page 5, line 16 through ln. 30: Replace paragraph:

A supporting object is to provide a walk-run reciprocating pedal exercise machine in which the return of each pedal forward to the step-down position from varying stride lengths is initiated and caused by the user's front foot step-down and accompanying [[opposite]] rear foot [[lift-off]] unweighting action, these two essentially concurrent actions always marking each end of stride. Thus, the user's end of stride action of front foot step-down and rear, returning foot [[lift-off]] lifting at varying stride lengths will cause the rear pedal to quickly return to its forward step-down position in time for the next (returning foot) step-down, the pedals essentially following the user's varying strides and even anticipating each next stride, the rear pedal starting to move forward to be positioned for the next step-down immediately upon step-down on the opposite, front pedal or [[lift-off]] lifting of the rear foot [[from]] at the rear pedal.

4. Page 20, line 34 through pg. 21, ln. 25: Replace paragraph:

Figs. 9 and 10 are plan and side elevation views respectively of a powered version of the invention wherein an electric motor drives and regulates the speed of pedal travel rearward when the pedal is weighted and down. In this version pedal return is not dependent on downward force and motion of the opposite pedal, but returns under spring force when ~~of the opposite pedal, but returns under spring force when~~ released by the user's foot force and the driving force of the motor drive. Many of the parts in this machine are basically the same in form and function as in the Fig. 1 version including a Base 10, Track Bar Pivot Tabs 11, Track Bars 12 and 13, Spring Dampers 14 and 15 and a Right Pedal 16 and Left Pedal 17. Instead of wheels attached to the pedals, light weight tubular Rollers 60 (preferably of plastic material) are spaced and held in place by a Right Roller Spacer 61 and a Left Roller Spacer 62 (also preferably of light weight plastic), each having an inverted "U" shape to span both sides of its corresponding Track Bar 12 and 13 and having tab projections extending into the hollow centers of the Rollers 60. Thus, each pedal will roll along its corresponding track bar resting on the Rollers 60 while the rollers roll along the two flanges of the track bar as in a roller bearing, the rollers and the spacers moving half as far as the pedals. This design allows the pedal and the total assembly to be lighter, with more evenly distributed loading and no heavy wheel bearings and attaching points on the pedals. A Right Return Lug 65 on the underside of Pedal 16 and a Left Return Lug 66 on Pedal 17 engage corresponding slots in the top of Right Roller Spacer 61 and Left Roller Spacer 62 respectively to insure the return of the roller assemblies forward on each return stroke when little downward force will exist on the rollers.

5. Page 22, line 32 through pg. 23, ln. 10: Replace paragraph:

When the Motor 69 is running, rotation of the Drive Drum 71 is clockwise as shown, driving the Drive Wheel 73 counter-clockwise and driving the Pedal 16 rearward as indicated. The inclined Drive Wheel Spring 75 maintains a driving force between Pedal 16 and the Drive Wheel 73 and between the Drive Wheel 73 and the Drive Drum 71 throughout the rearward travel of the pedal while the user's [[wejght]] weight holds the pedal down. The floating, or spring-loaded Drive Wheel 73 insures maintaining the driving contact over a range of user weights and resulting pedal down stroke levels. The Left Pedal 17 operates in the same way in conjunction with its Drive Wheel 74 and Drive Drum 72. For simplicity, the Drive Wheel Spring 75 is a double spring as seen in Fig. 11 having a bottom or base wire section joining the two upwardly inclined coils and drive wheel supporting axes at the top ends, the base wire section passing under the base of the Gearbox 70 through a groove in same as shown to hold the Drive Wheel Spring 75 in place.

6. Page 23, line 31 through pg. 24, ln. 26: Replace paragraph:

In Fig. 12 an additional advantage of the combination of separately moving pedals and floating drive wheels is shown. The Right Drive Wheel 73, in its center hub or bore has a Sprag Clutch 76 which allows the drive wheel to rotate freely counter-clockwise as previously described when the user is walking normally with some small rearward foot force. With the Sprag Clutch 76, if the user wants to stop and pushes forward on the Pedal 16, resisting rearward motion, the Drive Wheel 73 will start to be driven forward at the top with the Pedal 16 or clockwise, causing the Sprag Clutch 76 to grip its axle which is the top horizontal leg of the Drive Wheel Spring 75, applying a clockwise moment to the Spring 75 and pulling the Drive Wheel 73 away from and out of contact with the Drive Drum 71 as indicated. A Right Stop Bar 77 is fixed to the Motor 69 and Gearbox 70 and extending closely in front of the Drive Wheel 73 as shown in Fig. 10. When the user pushes forward on the Pedal 16 as just described, the Drive Wheel 73 contacts the Stop Bar 77 as shown in Fig. 12 and the Drive Wheel 73, with the Pedal 16 pushing down against the substantial spring force, will stop, holding the pedal at the point at which the user started to push forward on the Pedal 16. This allows the user to stop at any point in a stride by leaning back and pushing forward on the pedal, both sides working the same, with a similar [[Right]] Left Stop Bar [[77]] 78 for Left Pedal 17, and to restart by simply pushing rearward again. The most likely point at which to stop would be at the step-down position, since the normal reaction in stopping is to immediately step down on the unweighted foot moving forward, so it is easy to push forward with the foot at step-down without any "leaning", the natural action in stopping being to step farther out forward just before the foot touches down and pushing forward with the foot at step-down. Another advantage of this brake or stop is its ability to continuously hold the pedal from freely moving forward when a user steps on the pedal, avoiding any accidental or unintended motion.

7. Page 24, line 27 through pg. 25, ln. 24: Replace paragraph:

An additional feature can be added to a motor driven machine, automatic speed control as shown in Fig. 13. Here, one embodiment is shown wherein the complete motor-drive assembly including the Motor 69, Gearbox 70, Drive Drums 71 and 72, Drive Wheels 73 and 74, Drive Wheel Spring 75, Sprag Clutches 76 and Stop Bars 77 and 78, is mounted on a Floating Drive Base 80. This Base 80 is mounted on leaf-spring-like Flexures 81 attached at either end of the Base 80 and suspending it from fixed Flexure Supports 82 so that the Base 80 and the entire drive assembly is movable back and forth in the direction of pedal travel while spring-biased toward a neutral unloaded centered position. A Position Sensor 83 is fixed on the Base 10 at the front end of the Floating Base 80 and is positioned to detect any forward and backward movement of the Base 80 as shown. The Position Sensor 83 is represented in Fig. 13 as a simple variable resistor which is actuated by movement of the Floating Base 80 so that as the Base 80 moves rearward (left in Fig. 13) the resistance decreases, and if it moves forward, resistance will increase. Typically sensors are small and operate on low power circuits, therefore a Speed Control 84 is shown [[electically]] <u>electrically</u> connected to Position Sensor 83 which will amplify the low power varying output of the Sensor <u>83</u> to provide proportionately varying output power or signal to vary the speed of the Motor 69 in proportion to deflection of the Floating Base 80. The Speed Control 84 would include adjusting means to adjust or vary the normal or base speed and/or load and sensitivity or gain. Thus, when the Pedal 16 is down with the Drive Wheel 73 engaged, contacting both Pedal 16 and Drive Drum 71 as shown in Fig. 13, a rearward force (left in Fig. 13) on the Pedal will apply a rearward force on the Drive Wheel 73 and thus on the entire drive assembly and Floating base 80 and cause a proportionate rearward deflection of the Base 80 on the Flexures 81 as shown. This deflection will, at the same time, cause the Position Sensor 83 to send a decreasing resistance or higher current signal to the Speed Control 84 which, in turn, will increase the speed of Motor 69.

8. Page 35, line 17 through pg. 36, ln. 2: Replace paragraph:

It is important to note that, in a user powered machine, with only the user's foot pushing rearward, for the user to stay in place and not move forward (with no hip-level bumper or the like), the pedal's path of travel must be inclined up to the front, the user's weight component in the travel direction rearward balancing the travel resistance including roller [[resistance]] friction. A big advantage of pedals on rollers compared to a sliding belt treadmill is the much lower travel direction friction and thus, a significantly lower weight component and [[correspomdingly]] correspondingly lower incline required to walk or run on a user powered machine. This explains why very few user powered treadmills are in use. In the user powered pedal machines described herein, the additional resistance above the rolling resistance of the pedal rollers or wheels that is required to "regulate" the speed and provide a steadying resistance to the pedals' motion will be relatively low, and the incline required will be significantly lower than in a user powered treadmill, making a user powered pedal machine more acceptable (if such a machine existed for true normal walk-run action), with less "uphill climbing" involved. A powered or motorized machine overcomes the travel resistance by driving the pedal (or belt) rearward for the user, so no incline is necessary , though any incline will still reduce the power required from the motor drive.

9. Page 36, line 12 through pg. 37, ln. 1: Replace paragraph:

In this pedal machine, as in Fig. 22, a relatively low rearward force will be required to drive the pedals and the negative pressure or vacuum required of the Pump 140 will be correspondingly low, depending on the diameter and cross section area of the Return Bellows 118 and 119. At times, the pressure could be positive, if the user inclines the machine above the friction drag angle and when the user wants to speed up by pushing harder (in a user powered machine). The Pressure Sensor 142 therefore, would be selected to sense pressures in a range from about minus five (-5) to plus five (+5) PSIG, and would transmit an electrical signal to the Speed Control 84 that is proportional to the pressure level sensed at any time. The Speed Control 84 would receive a low power signal from the Sensor 142 as described earlier for Fig. 13 and increase the speed of Motor 69 if an increased pressure is sensed, indicating increased user foot force and desire for [[increased]] <u>increased</u> speed and conversely, decrease speed if a lower than "base" level pressure and foot force is detected. If there is no significant increase or decrease from the base level, the speed will remain constant and thus, only a short duration of increased foot rearward or forward force would be required, during which the user would temporarily hold handrails or the like or use some "body english", giving a quick thrust at the end of a stride and rebalancing on the next step-down. The Speed Control 84 could also include programming to sense a more extreme level of pedal forward force and duration, indicating the user wants to stop, at which <u>point</u> it would completely stop the Motor 69 and Pump 140.

10. Page 38, line 30: Add new paragraph:

Also, it can be appreciated that a user need not completely lift the rear foot from the pedal for return, but could allow the returning pedal to carry the foot forward as on a "cycle" pedal machine, while still "stepping down" most of his weight on the front pedal. End of stride is not dependent on complete lift-off of the rear foot from the rear pedal. Especially in powered return versions such as in Figs. 4 & 5, an alternate control input signal could be provided to allow manual or other signaling of end of stride for therapy use where the user has difficulty lifting and returning the feet, for example. Even having a majority of the user's weight on the forward pedal could provide significant return force to the rear pedal. This can be a decided advantage over a treadmill where, rather than having a returning pedal to help such a user, the treadmill belt continues to pull a "dragging" foot rearward.